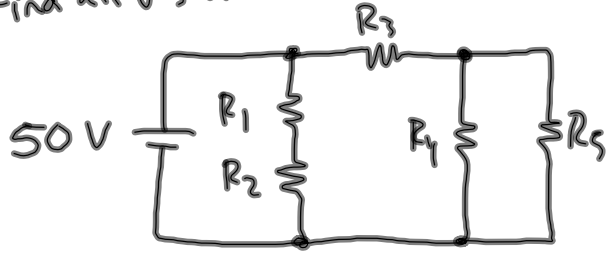
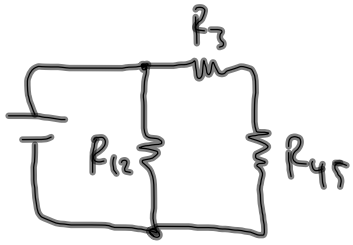
Electrostatics and Circuits:

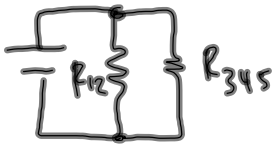
Variable	Units
$\vec{E}$	N/C or V/m
q	C
(Constant) k	$N \cdot m^2/C^2$
r	m
θ	degrees or radians
R	Ω
ΔV	V
I	A
C	F
P	W
ΔU_e	J
$\vec{F}$	N
d	m
A	m^2

Find all V's and I's:



$R_1 = 10\Omega$
$R_2 = 30\Omega$
$R_3 = 25\Omega$
$R_4 = 45\Omega$
$R_5 = 15\Omega$



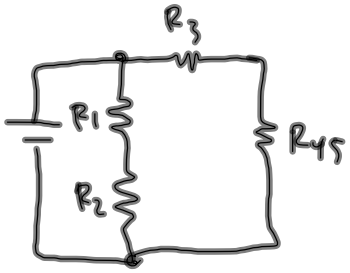


③ $I_{12} = \frac{50V}{40\Omega} = 1.25\,A$

④ $I_{345} = 1.38\,A$

① $R_{eq} = 19\Omega$ ② $I_{total} = \frac{50\,V}{19\Omega} = 2.63\,A$

⑤



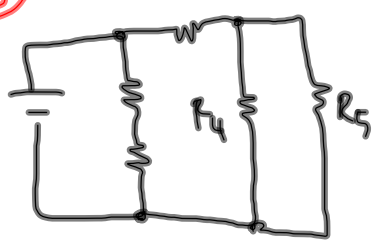
$V_1 = I_{12}R_1 = 12.5\,V$

$V_2 = I_{12}R_2 = 37.5\,V$

$V_3 = I_{345}R_3 = 34.5\,V$

$V_{45} = I_{345}R_{45} = 15.5\,V$

⑥



$I_4 = \frac{V_{45}}{R_4} = 0.345\,A$

$I_5 = \frac{V_{45}}{R_5} = 1.03\,A$